Rapid Growth of Malignant Pleural Mesothelioma

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(*J Thorac Oncol.* 2007;2: 966–967)

A 67-year-old male smoker with no known asbestos exposure presented with a 4-day history of shortness of breath on exertion. On August 15, he visited another clinic, and chest radiography revealed a massive pleural effusion in the right hemithorax. Therefore, he was referred to our hospital on the same day. Physical examination was unremarkable. Laboratory findings revealed no abnormalities. A chest tube was inserted, and 3000 ml of serosanguineous fluid was obtained. On August 16, chest computed tomography (CT) revealed a slightly enlarged posttracheal lymph node and partial thickness of the right pleura (Figure 1A). Cytology of pleural effusion revealed adenocarcinoma. On August 21, chest CT revealed right-sided pleural thickness in the right thorax (Figure 1B). However, his condition rapidly deteriorated due to uncontrollable pleural effusion. On August 24, chest CT revealed circumferential pleural thickening in the right thorax (Figure 1C). He experienced progressive dyspnea and anorexia and died on August 28, 2006. Autopsy was permitted. Macroscopically, the tumor was presenting as circumferential pleural thickening exceeding 1 cm in thickness, typical of diffuse malignant mesothelioma (Figure 2). Microscopically, the tumor was suggestive of malignant mesothelioma (Figure 3). Immunohistochemistry revealed that the pleural tumors were positive for WT-1, weakly positive for carletinin, and negative for carcinoembryonic antigen, TTF-1, Ber-EP4. Thus, the definite diagnosis of malignant pleural mesothelioma (MPM) was determined. There was no evidence of distant metastasis and involvement of the left hemithorax. The left pleural effusion revealed no malignant cells.

MPM is an aggressive tumor with a poor prognosis and an increasing incidence in many countries. However, there have been several cases in which the interval between the onset of symptoms and death has been less than 3 months.[1,2] Lulenski et al.[2] described that the patient expired within 3 weeks of admission because of the rapidly growing MPM. Lie et al.[3] reported a case of sudden death as the initial manifestation of MPM. Our case also demonstrates the extremely rapid growth that the tumor may assume. The time between onset of symptoms and death was 2 weeks. Therefore, we could not make the definite diagnosis of MPM before the postmortem examination. Although factors involved with rapid growth are unknown, an awareness that MPM may progress so quickly may help in the diagnosis.

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ISSN: 1556-0864/07/0210-0966

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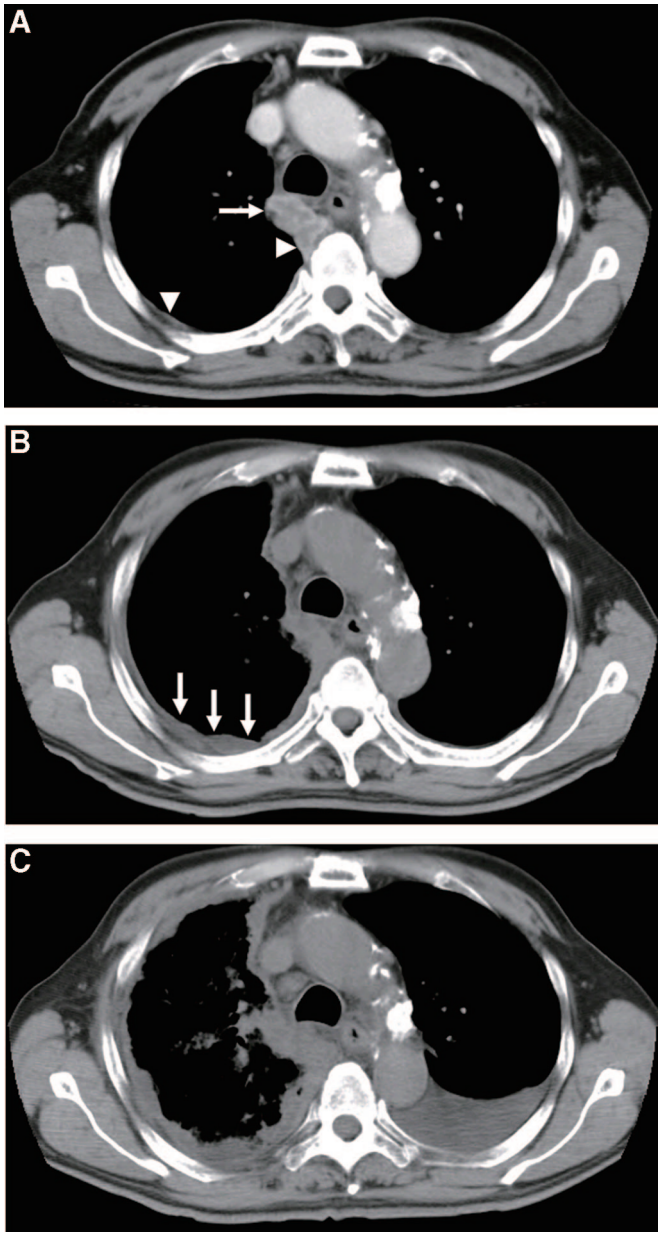

FIGURE 1. Chest computed tomography scan images. (*A*) Enhanced image (August 16, 2006) showing a slightly enlarged pos-tracheal lymph node (*arrow*) and partial thickness of the right pleura (*arrowheads*). (*B*) Image (August 21, 2006) showing the growth of pleural thickness (*arrows*). (*C*) Image (August 24, 2006) showing circumferential pleural thickness and left pleural effusion.

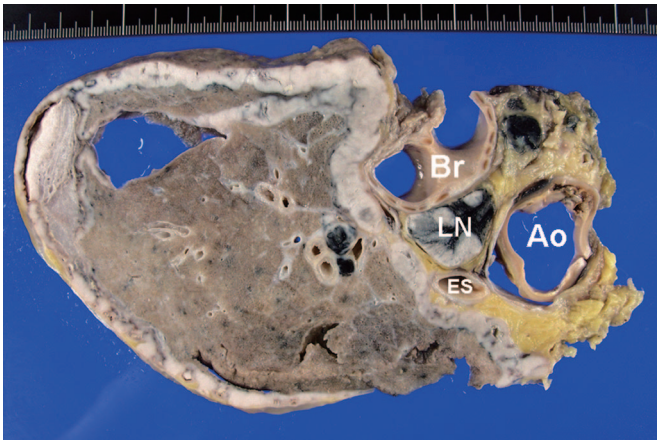

FIGURE 2. Axial section of the right lung showing mild to moderate thickening of the pleura over almost its entire surface. Br, right main bronchus; Ao, aorta; LN, posttracheal lymph node swelling; Es, esophagus.

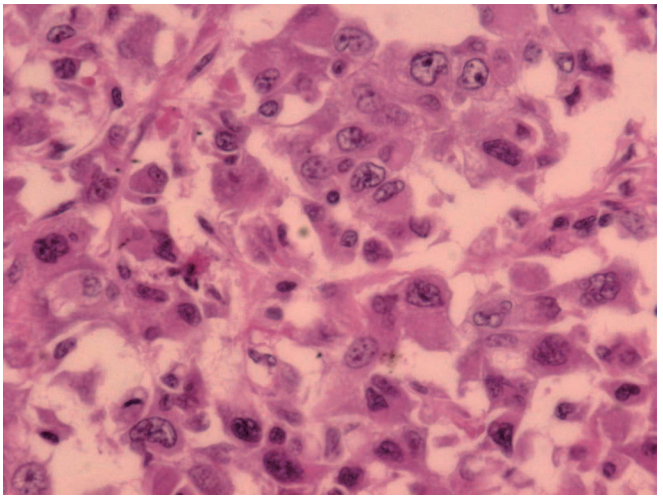

FIGURE 3. Microscopic appearance showing the anaplastic nature of this fast-growing malignant mesothelioma.